

REMARKS

Claims 1,2, 7, 8, 9, 14 and 15 were rejected under 35 USC 102(e) as anticipated by Kuwata (U.S. Patent No. 6,151,410). The rejection is respectfully traversed.

Kuwata discloses an automated image-processing apparatus and method to correct the balance of color in an image. A sample-count distribution of image data is found for each color component by applying a thinning technique on samples. Then, a judgment is made to determine whether analogy exists among the sample-count distributions of the color components. A low degree of analogy suggests that characteristics recognized from the sample-count distributions shall naturally be made uniform among the color components. Correction is made by correcting an offset, with an emphasis on the contrast and brightness to produce a well pitched and good image from the image data with poor color reproducibility.

Specifically, in Kuwata, a distribution of gradation-color-specification data is found for each color component, and characteristics of color components are identified from the separated distributions of the gradation-color-specification data. Judgment as to whether pieces of gradation-color-specification data of color components resemble each other are formed by finding maximum and minimum values of the data, and evaluating differences in maximum and minimum among the pieces of gradation-color-specification data. An attempt is then made to make the identified characteristics uniform. That is, a well pitched image having no color slippages can be obtained without regard to the substance of the image (see, for example, col. 3, lines 5-28). Hence, only picture elements approximated by the gradation-color-specification data are picked up to be used in formation of judgment on characteristics (see, for example, col. 4, lines 7-30).

The present invention discloses a system and method of correcting the image quality of color images captured, for example, using a digital camera or scanner. Image processing occurs as follows. When image correction is requested, image data is subjected to a judgment of the necessity/non-necessity of correction items in accordance with the following judgment processing. For items determined as requiring correction, the color image is judged, in the following order, to determine whether the image is a sunset scene, color-covered, normal in contrast and normal in sharpness. Using this process, predetermined image correction is carried out with respect to one or more of the items regarding the image quality of color images, rather than performing correction compared to a predetermined value. That is, the judgment is made based on each item on the basis of the whole condition of each image.

Specifically, judgment is first made as to whether image correction is required. The judgment is based on at least sunset judgment, color covering judgment, contrast judgment and sharpness judgment. An image correction unit performs the image correction for items corresponding to a color image judged as "correction necessary" on the basis of the judgment results. For example, if an image, which is not a sunset scene, is judged to include too much red, the red component on the whole of the color image is weakened to correct the color covering. That is, judgment as to whether the color image is a sunset scene ("sunset judgment") is performed on the basis of the histogram distribution of image data of part of color components in the range of red to yellow. Then, judgment as to whether the color image is color-covered is performed on the basis of the histogram distribution of image data of the whole of color components in the range of red to blue. This is followed by judgment of contrast and sharpness which uses the results of the histogram image data created during sunset and color-covering judgment.

The Examiner cites Fig. 1, element 20, col. 8, lines 42-47, and col. 19, lines 34-40 of Kuwata as disclosing the “judging” limitation of claims 1, 8 and 15, and cites col. 2, lines 63-66 of Kuwata as disclosing the “performing” limitation of the same claims. As noted by the Examiner in the *Response to Arguments* on page 2 of the Office Action, “Kuwata does not disclose these four criteria in order to make a judgement on the quality of an image,” referring to the sunset scene, the color image covered with a specific color, contrast and sharpness of the whole are of the image data. Nevertheless, the Examiner contends that the “at least one” language in claims 1, 8 and 15 require that only one of the criteria be disclosed by the reference.

Claims 1, 8 and 15, as amended, recite judging whether correction of image data of a color image is necessary based on the quality of four criteria, namely, sunset scene, the color image covered with a specific color, contrast and sharpness of the whole area of the image data. The claims also require performing a predetermined correction processing on at least a portion of the color image based on the judgment of the quality of the image data. That is, the claims have been amended to clarify that a judgment is first made to determine which of the criteria requires correction. Then, correction is performed on the portion of the image data that requires correction. In Kuwata, on the other hand, no judgment is made as to the correctness of the sunset scene, color image covered, contrast or sharpness.

Since the recited structure is not disclosed by the applied prior art, claims 1, 8 and 15 are patentable. Claims 2, 7 and 16 (depending from claim 1) and claims 9, 14 and 17 (depending from claim 8) are similarly patentable.

Claims 16 and 17 were rejected under 35 USC 103(a) as unpatentable over Kuwata in view of Inoue (U.S. Patent No. 6,229,580). The rejection is respectfully traversed for the same reasons presented in the arguments with respect to the rejection under 102(e). Inoue fails to

disclose performing a predetermined correction processing on at least a portion of the color image based on the judgment of the quality of the image data, as required by the claimed invention. Hence, no combination of Kuwata and Inoue disclose the claimed invention.

In view of the foregoing, claims 1, 2, 7-9 and 14-17 are in condition for allowance. An indication of the same is solicited.

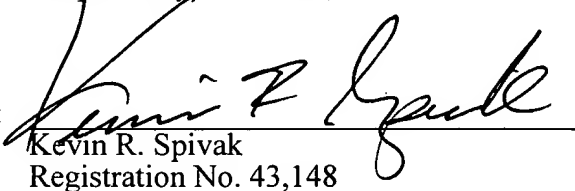
Attached hereto is a marked-up version of the changes made to the specification and claims by the current amendment. The attached page is captioned "**Version with markings to show changes made**".

In the event that the transmittal letter is separated from this document and the Patent Office determines that an extension and/or other relief is required, applicant petitions for any required relief including extensions of time and authorizes the Commissioner to charge the cost of such petitions and/or other fees due in connection with the filing of this document to **Deposit Account No. 03-1952** referencing docket no. **325772009600**.

Respectfully submitted,

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In the Claims:

Please amend claims 1, 8 and 15 as follows.

1. (Amended) An image processing method, comprising:
judging whether correction of image data of a color image is necessary based on [the] a quality of [at least one of] sunset scene, the color image covered with a specific color, contrast and sharpness of the whole area of the image data; and
performing a predetermined correction processing on at least a portion of the color image based on the judgment of the quality of the image data.

8. (Amended) An image processing apparatus, comprising:
a memory which stores an image data of a color image;
a judge section which judges whether correction of the color image based on [the] a quality of [at least one of] sunset scene, the color image being covered with a specific color, contrast and sharpness of the whole area of the image data; and
a correct section which performs a predetermined correction processing on at least a portion of the color image based on a judgment of the quality of the image data by the judge section.

15. (Amended) A recording medium with a recorded program, the program performing:
judging whether correction of image data of a color image is necessary based on [the] a quality of [at least one of] sunset scene, the color image being covered with a specific color, contrast and sharpness of the whole area of the image data; and
performing a predetermined correction processing on at least a portion of the color image based on the judgment of the quality of the image data.